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TABLE OF CONTENTS

Burns	2
Facial Injuries	8
Multiple Skeletal Lesions in Young Children Due to Trauma	10
Ureteroileostomy	12
Eye Infections Following Cataract Extraction	13
Roentgen Manifestations of Caisson Disease	15
Treatment of Acute Nephritis	16
From the Note Book	20
Accounting Procedures for Collection Agents (BuMed Inst. 6010.2B)	22
Influenza Vaccine; use of (BuMed Notice 6230)	22
Civil Service Employees' Medical Record Jacket (BuMed Inst. 6150.18) ...	22
Insect and Rodent Control (BuMed Inst. 6250.5)	23
Outservice Training Available to Enlisted HMC (BuMed Inst. 1510.7)	23
Training Available to Hospital Corps, Group X (BuMed Inst. 1510.4A)	23
Respirators, Distribution and Reporting of (BuMed Inst. 6700.17)	24
Travel Costs of Army and Air Force Patients (BuMed Inst. 7301.3B)	24

DENTAL SECTION

MEMORANDUM for All Dental Personnel, U.S. Navy	25
Increased Participation in Non-Pay Dental Companies	26
Appointments in the Regular Navy	27
Naval Dental Reserve Seminar Planned for Atlantic City	27

MEDICAL RESERVE SECTION

New Requirements for Promotion of MSC Officers, Inactive (S & A)	28
Physical Examinations at Main Recruiting Stations	33

PREVENTIVE MEDICINE SECTION

Future of Atomic Energy	34	Poison Control Centers	37
Food-Service Training Aids	34	Toxoplasmosis	39
Handling of Plastic Resins	37	Importance of Chest Survey	40

Policy

The U.S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor are they susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Notice

Due to the shortage of medical officers, the Chief, Bureau of Medicine and Surgery, has recommended, and the Chief of Naval Personnel has concurred, that Reserve Medical Officers now on active duty who desire to submit requests for extension of active duty at their present stations for a period of three months or more will be given favorable consideration. BuPers Instruction 1926.1B applies.

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Burns

A burn is considered a problem in colloid, electrolyte, and water balance due to a shift of the extracellular fluid resulting in a state of acute internal dehydration.

The primary aims in the treatment of burns are: (1) prevention and treatment of shock; (2) prevention and treatment of infection; (3) utilization of a local therapy that will insure drying of the burn wound and permit early skin grafting; (4) maintenance of adequate nutrition and hemoglobin level during the healing stage; and (5) prevention and correction of contractural deformities.

The treatment of burns demands the knowledge of normal physiology, pathologic physiology, cardiovascular dynamics, bacteriology, endocrinology, nutritional balance, and plastic surgery.

A burn results in varying degrees of necrosis followed by a chain reaction of altered body physiology. This includes pain, increased capillary permeability, alteration in blood flow, sludging of the blood, hemoconcentration and, ultimately, shock. An understanding of the pathologic physiology

is essential because rational therapy is based on the changes induced by thermal trauma.

The young withstand burns better than the aged due to the greater stress response. Burns involving 30 to 45% of the body surface in patients over 60 years of age are invariably fatal. People over 60 may die from causes not related to the burn. Anemia, generalized arteriosclerosis, cirrhosis, cardiovascular and renal disease make it difficult to plan fluid and electrolyte therapy for the aged group.

Burns of the respiratory tract are usually caused by hot irritating gases and may involve the nasal, buccal, pharyngeal and laryngeal mucous membranes as well as the entire tracheobronchial tree. Intravenous fluids are given in minimal amounts to avoid pulmonary edema. A high humidification of the room is beneficial. A 3% cocaine spray may reduce the glottic edema. Suction is instituted for the removal of exudates, and oxygen is administered for anoxia. A tracheotomy set is held in readiness.

The prognosis varies directly with the type of burn, intensity of burn heat, duration of the exposure, and extent and depth of the burn. The extent and depth will vary with the type of apparel worn. Cotton, linen, and viscose rayon are highly inflammable, whereas hairs and silks are not inflammable. The clothing must be removed so that the extent of the burn can be charted and the weight estimated. A deep burn involving more than 50% of the body surface is usually fatal. There is a tendency to underestimate the depth and overestimate its extent.

First Degree Burns (Epidermal). This type causes a mild erythema. There is dilatation of the capillaries and edema of the skin with desquamation of the superficial part of the epidermis.

Second Degree Burns (Dermal). Blistering is due to an epidermo-dermal separation produced by the exudation of fluid. There is a loss of the epidermis and varying parts of the dermis. When the base of the blister is red, smooth, and moist, healing may be expected in 7 to 10 days unless infection occurs. Epithelization originates from a few remaining islands of basal epithelium and from the hair follicles and sweat glands. When the base of the blister is gray and dry, the dermis is more deeply involved and healing will be slower because a layer of burned dermis must first be eliminated as a slough.

Deep Dermal Burns. With this type, there is destruction of the dermis down to the deeper layers. A thicker layer of dermis is destroyed, exposing the base of the dermis which appears grossly punctated. There are numerous small islands of epithelium from which epithelization spreads as a pearly, white thin layer. The healed epithelium is often thin parchment-like and prone to cracking.

Third Degree Burns. The entire thickness of the skin is involved with destruction of all the epithelial elements so that natural healing occurs by epithelial cell migration from its edge and contraction of the burn wound.

Full-thickness burns may present any or all of several appearances in close juxtaposition: black or dark brown leathery char, dead white cadaveric, deep pink with thrombosed vessels which do not blanch on pressure, heavy desquamation with thin roseate pink beneath, and transparent with a network of thrombosed blood visible in the corium. An extensive flame burn or scald may be assumed to be largely third degree with little likelihood of error.

Systemic Treatment

Preliminary Examination. (1) Estimate weight; chart type, intensity, extent and depth of burn. (2) Draw blood for baseline examination; insert polyethylene tube and start colloid infusion before venous collapse occurs. Children may require the use of an intrasternal needle. (3) Record intake and output of fluids; insert a Foley catheter to measure the output. The hourly urinary output will determine the adequacy of fluid and electrolyte balance; chart emesis volume. (4) Chart vital signs: temperature, pulse, respiration and blood pressure are recorded every 2 hours for the first 8 hours. Capillary circulation is judged by the color and temperature of the skin.

Sedation. Rest lowers the oxygen requirements of the tissues. The extent and depth will determine the dosage. Demerol is preferable to morphine as the latter may depress the respiratory center which is already depressed by the severe peripheral vascular deficiency.

Oxygen Therapy. This lessens hypoxia and increases the oxygen supply to the tissues. Intranasal catheter administration of oxygen is preferable to the oxygen tent as the latter may result in overheating. Oxygen therapy should be available for respiratory burns and burns in the aged.

Replacement Therapy. Each burn patient must be closely observed and the therapy adjusted accordingly. Patients with extensive burns require large amounts of water, electrolytes, and colloids to compensate for the acute internal dehydration. Wallace has shown that adults do not require intravenous fluids when less than 18% of the body surface is burned. Children require intravenous therapy when 12% of the body surface is burned.

Colloids. Colloids are administered to maintain the osmotic pressure and are indicated when the hemoglobin rises above 19 gm. The replacement of the plasma protein reverses the pathologic shift of fluids and electrolytes, reestablishes the blood volume, relieves the excessive arteriolar constriction, reduces the hemoconcentration, and prevents capillary stasis and tissue anoxia.

The rationale of fluid and electrolyte therapy is based on the knowledge of the pathologic physiology of burns. Electrolytes are given to secure and maintain a minimal urinary output of 50 cc. per hour. The electrolyte solution is of the extracellular type, (sodium, chloride, and carbonate). Potassium and phosphate may be added. Large quantities of salt are given due to the rapid fall of serum sodium. During the acute stage, sodium and

chloride are the chief ions lost. Laboratory and clinical evidence shows that saline therapy alone will not sustain the circulation in acute burns without causing generalized tissue edema.

The hourly urinary output is usually a guide to proper fluid and salt therapy. The urinary output as an index to burn shock may not be accurate. When the blood pressure falls, renal filtration as well as the urinary output falls. Excess potassium administration is to be avoided if the urinary output is deficient. The serum potassium level can be lowered by administration of large amounts of glucose with insulin.

Water. Water is lost through evaporation from the respiratory epithelium, skin, and from the urinary output. If one assumes 1000 cc. per day for insensible loss, it is apparent that the total baseline water intake must be between 1800 and 2500 cc. to prevent dehydration and to insure water balance. Signs of dehydration are present when there is a loss of an amount of body water equal to 6% of the body weight.

Water and electrolytes are given to restore the extracellular fluid which has been shifted from the non-injured to the injured tissues. Administration of 100 gm. of glucose diminishes the amount of nitrogen lost in the starving patient by 50%. Therefore, 100 gm. of glucose is an essential part of the baseline requirement for each patient.

The total 24-hour intake should not exceed 10% of the body weight. One-half the dose is given in the first 8 hours. Half of the colloid and electrolytes are given the second day. The 2000 cc. of glucose in water is maintained. Burns involving 25% or more of the body surface require equal quantities of whole blood and plasma. There is a definite limit above which the extracellular space cannot be expanded safely. The amounts are modified by the patient's response as indicated by thirst, pulse, blood pressure, and urinary output.

Overhydration may be caused by overestimation of the burn area. Children, the aged, cardiac patients, and patients with respiratory burns require less than the estimated volume of fluid.

Intravenous therapy is discontinued when the output exceeds the intake and oral feedings are well tolerated.

All burn wounds are contaminated. The invasion of the burn area by virulent bacteria in the first 24 to 48 hours results in primary infections. Infection in the devitalized tissues sets free toxic substances with resultant toxemia. Infection in the slough may result in cellulitis.

Secondary contamination after the seventh or eighth day is due to secondary invasion by streptococcus or staphylococcus. Antifibrinolytic properties occur in the blood of patients with acute hemolytic streptococcus infection. Group A streptococcus sometimes produces an extracellular proteolytic enzyme in broth culture. The incidence of infection increases in direct proportion to the depth of tissue destruction.

Penicillin, 300,000 to 1,000,000 units, is given in order to obtain a high penicillin level in the circulating blood, cellular fluids, and the burn exudate. Clinical response to the infection will determine the increase in penicillin dosage or a change of antibiotic.

The flora of the burn may change with progress of the burn. *Proteus* and *pyocyaneus* organisms may complicate the picture. Burns of the legs and buttocks require streptomycin therapy for coliform bacterial contamination. Polymixin B appears specific for strains of *Pseudomonas aeruginosa*.

The suggested dosages for the antibiotics are: terramycin and aureomycin, 10 to 20 mg. per pound of body weight per 24 hours; erythromycin, 15 mg. per pound of body weight every 24 hours; streptomycin and dihydrostreptomycin, 10 mg. per pound of body weight per 24 hours; polymixin B, 1.1 mg. per pound of body weight per 24 hours. Sulfonamides may be used if renal function is adequate.

The local use of antibiotics, sulfa-film dressings, or local application of bacteriostatic agents are less effective in controlling infection in burns than the parenteral injection of these drugs.

A burn causes a stress response with release of an adrenal hormone, presumably Compound F. The degree of the reaction is determined by the eosinophil depression and by the daily urinary excretion of corticoids (5 to 8 mg.) and total neutral 17-ketosteroids (7 to 20 mg.). The early metabolic alterations, sodium retention, excretion of potassium and nitrogen, and eosinopenia are indicative of adrenal cortical activity.

A prompt drop in the circulating eosinophils is to be expected immediately after a burn and indicates that the adrenal mechanism is intact. It is the subsequent rise or failure to rise which may have prognostic significance.

The primary aim in local treatment is to avoid contamination and infection, provide and promote drainage, minimize the lymphatic drainage, obtain a dry sterile wound, and secure healing in the optimum time with minimal loss of function.

Local and systemic treatment should be carried out simultaneously because the local lesion is responsible for the systemic reaction.

Definitive treatment of the burn is started following the institution of shock therapy. The burn area is gently cleaned with phisoderm or some other detergent. Copious irrigations with warm saline are used to wash off the dirt and detritus. Blebs are not necessarily incised or excised because of the danger of opening avenues of infection. The blebs may be punctured and allowed to collapse. Scrubbing or forceful cleansing is avoided.

Local drugs have little effect upon the healing of a burn and often prove detrimental. When drying of the wound has been achieved and infection controlled, the treatment of a full-thickness burn becomes a surgical problem of skin replacement.

Local treatment of burns has gone through many phases: wax, tannic acid, pressure dressings, and the exposure method.

Allen and Koch introduced the occlusive pressure dressing in 1941 and this has been used successfully up to the present time. The objective is to cover the open wound with the simplest possible dressing that will protect it from reinfection, provide for drainage of serum, exert a uniform moderate pressure, and be easily removed if infection develops. The aim is to create a dry wound free from infection and receptive to early skin grafting. Evans found the separation of burn slough occurred sooner when the closed method was used. The early application of pressure dressings to counteract edema fluid collection will avoid loss of the capillary filtrate. The dressing should not impair the venous return.

Wallace, in 1949, reintroduced the exposure treatment of burns. The burned area is cleansed, dried, and dusted with powdered penicillin lactose, supplemented with parenteral penicillin therapy. The objective of this method is to obtain and maintain a dry surface which will be unfavorable to bacterial growth. A high relative humidity and a low environmental temperature are limiting factors for the successful use of the exposure method. The latter gives rise to early and mild fever, whereas the occlusive dressing results in prolonged hyperpyrexia.

Advocates of the exposure method believe that drying of the burn occurs more rapidly and, therefore, lessens the possibility of infection. Time-consuming and expensive dressings are avoided, and mass casualties can be treated with limited personnel.

Burns pass through three clinical stages: (1) Shock. Great strides have been made in the treatment of shock due to the better understanding of the physico-chemical changes in salt and water balance. Death may occur from the diminished blood volume and its concomitant sequelae. (2) Toxemia. Sepsis may be prolonged and extend well into the healing stage. Toxemia and septicemia present unsolved problems which have yet to be conquered. Death may result from infection in spite of the use of antibiotics. (3) Healing. Closure of the skin occurs by separation of the slough, granulation, and epithelization. Death may occur from sepsis and debilitation.

Systemic treatment is directed to the correction of the disturbed physiology. This is accomplished by restoration of blood volume and extracellular fluids to compensate for the acute internal dehydration; reversal of hydration therapy by withholding of electrolytes and fluids during the stage of diuresis; and replacement of sodium, potassium, protein, and red blood cells to compensate for losses from granulating surfaces during the stage of healing.

Local treatment is directed to the healing and closure of the burn wound. This is accomplished by use of a local therapy to insure drying of the wound; restoration of the body surface by skin grafting, hastened by debridement agents, homografts, and postmortem grafts; and prevention and correction of contractural deformities by the use of early skin grafts, thereby minimizing scarring and subsequent contractures. (Kaye, B. B., Burns - An Outline for Treatment, *Am J. Surg.*, 92: 123-136, July 1956)

Facial Injuries

Despite the admirable efforts and achievements of persons concerned with accident prevention, the continuing daily toll of life and limb from motor accidents demands additional and coordinated methods of preventing or moderating injuries.

The importance of facial injuries may be noted from the fact that the frequency rates of incidence of the various bodily areas involved in a series of 661 automobile casualty survivors were as follows: extremities, 28%; head, 20%; face, 19%; chest, 14%; trunk, 7%; neck, 5%; pelvis, 4%; abdomen, 3%.

The significant frequency rate of facial injuries among automobile casualties, as distinguished from all other traffic injuries, has not been determined previously because of their usual inclusion with head injuries in general. In this series of 661 casualties, however, 295 persons (45%) received varying degrees of facial injuries as distinguished from injuries of the head.

All age groups were represented, but the majority of the patients were young adults. A distribution, according to the place they were seated in the car, of automobile casualty survivors who had sustained facial injuries shows that of 163 men and 132 women involved, 100 men and 21 women were in the driver's seat; 35 men and 65 women were front seat passengers; 10 men and 17 women were rear seat passengers. The seating position was unknown for 22 men and 19 women.

From these figures, it can be seen that men predominate in the driver group. The reverse is true of guest passenger seating. Fifty-one persons in this series could not be classified accurately because of insufficient evidence in the medical records. All that was known was that they were occupants of crash vehicles.

More reliable medical clues regarding the nature and magnitude of forces involved in motorist injuries may be derived, perhaps, from the nature and degree of injury received. In crash-impact studies, even the slightest type of injury may hold some engineering significance, either implicating or absolving certain design features as sources of injury under crash conditions. On the whole, however, injuries of motorists fall into three general classes: topical (lacerations, abrasions, and contusions); skeletal (bone and joint); and internal.

The types of lesions received by 295 automobile casualty survivors, who had facial injuries, were as follows: lacerative, 54% (203); contusive, and abrasive, 24% (91); fracture, 22%, (80). A number of these people had injuries of all kinds.

The frequency rates of involvement of the three principal levels of the face were as follows: upper third, 33%, (109); middle third, 53% (175); lower third, 14% (49). The large number of lacerative and contusive lesions about the eyes is to be remarked. Several of the latter were severe. The conjunctival

tissues were involved frequently, and the corneal, rarely; however, injuries to the corneal tissues were sometimes associated with depressed fractures of the malar bones. A frequent complication of the latter fracture was injury to the infraorbital nerve with resultant anesthesia over its distribution.

Lacerations of the lips were noted in 27 persons. Exclusive of complicating tooth injuries, intraoral laceration occurred in 12 persons, the uvula and tongue were each cut once respectively. The preponderance of injuries to the middle third of the face is to be noted; these included external and internal nasal injuries in 17 persons.

The vulnerability of the middle third of the face to skeletal injuries is shown by the following figures: In 118 fractures, the upper third was involved in 7 instances (frontal bones); the middle third in 62 (nasal bones, 26; zygoma, 22, and maxilla, 14); and the lower third (mandible) in 30. In 19 persons, teeth were involved. Several of these fractures were bilateral, usually those involving the mandible. There were three nasal, one maxillary and two mandibular compound fractures. Undoubtedly, there were more of these in the mandible. Teeth were driven into the maxillary sinus in only one instance; more teeth, however, were otherwise injured or lost subsequently.

The facial fractures were associated with lesions in other parts of the body as follows: extremities, 19; chest, 13; skull, 3; spine, 2; pelvis, 2. Eleven of these people exhibited varying degrees of shock on admission to the hospital, and another 18 persons showed signs of cerebral concussion.

The epidemiological approach to the problem of motorist safety (of which human and crash-impact engineering is a component part) is based on the idea that source of impact as well as magnitude is a most important factor in the causation of crash injuries.

The following data stress the importance of the occupant's relation to impact areas as a determinative factor in the production and frequency of skeletal involvement. The occurrence of fractures distributed according to the seating position of those injured is as follows: of 121 in the driver's seat, 37 (31%) sustained fractures; of 96 front seat passengers, 18 (19%); and of 27 rear seat passengers, 9 (33%). Of 51 whose seating position was unknown, 16 (31%) sustained fractures. The average of baseline percentage rate of fractures in this series is 27%. It is noted that all categories of occupancy adhere fairly closely to this figure. However, in larger series, with epidemiologic significance, the back seat always proves to be the safest one in the car. This was especially evident in a study made by the Cornell group in regard to facial injuries in children. The incidence in this study was low because most of these children had been riding in the back seat.

Undoubtedly, fractures sustained by persons seated in the back are caused, in some instances, by the catapulting over the rear of the front seats onto the forward structures of the interior in severe forward crashes or in upsets.

Up to recent times, those treating the injured have been almost wholly concerned with the diagnosis and treatment of mechanical injuries, and have

lumped them together, regardless of the source. From studies of cause, it is but a step to prophylaxis. Much is written of deformation characteristics of both external and internal automotive structures, and of surface padding and safety gear—that is, apparel (crash helmets), safety belts, and shoulder harness (to act as a barrier between occupants and impact areas). These, however, are engineering problems.

From the standpoint of the physician and the dentist, it would seem that the attention of the engineer has been focused on the prevention of injuries to the head when facial structures should be getting more attention.

Until more data are known, however, professional groups should avoid arriving at foregone conclusions. The professional responsibility still remains the active and specific treatment of any and all kinds of injuries of motorists. Most important, of course, are first aid, emergency care, and the ultimate definitive treatment. (Kulowski, J., Facial Injuries: a Common Denominator of Automobile Casualties: J. Am. Dent. A., 53: 32-37, July 1956)

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Multiple Skeletal Lesions in Young Children Due to Trauma

In 1946, Caffey described six patients with subdural hematoma who exhibited 23 fractures and 4 contusions of the long bones. In not a single case, was a history of trauma obtainable. Since that time he has called attention repeatedly, in conferences and teaching sessions, to the frequency with which trauma produces skeletal changes in infants and young children. During recent years, a number of reports have appeared which confirm Caffey's observations.

Despite their frequency, traumatic bone lesions in early childhood are often missed. There are several reasons for this: a history of a traumatic episode is often not obtained; the symptoms, when present, are generally mild and easily overlooked or minimized; the roentgen changes may not appear for several days after the injury and, moreover, they are unlike the changes characteristic of trauma during later childhood and adult life; finally, the roentgen changes are often multiple and, consequently, are confused with some deep-seated bone disease.

Babies frequently fall or are dropped. The traumatic episode may be forgotten or suppressed. If the immediate symptoms are not severe, as is usually the case, the episode may be considered too trivial to mention. Sometimes one parent is afraid to tell the other about an injury. Also, a sitter, relative, or nurse may be reluctant to report to the parents that a mishap has occurred because she fears that she may be accused of negligence. A baby may be injured by an older sibling in the course of rough play.

Wooley and Evans emphasize that the injury is often deliberately inflicted by a parent or custodian. Parental indifference, ignorance, preoccupation with other duties, alcoholism, psychoneurosis or psychosis,

relegation of control to irresponsible children or adults, and improper physical equipment or environment contribute to the frequency with which skeletal injury takes place.

Bone trauma is sometimes produced by the baby's legs getting caught in the rungs of the crib. Seizing the child roughly by the hand may cause lesions about the shoulder.

Injury not infrequently takes place during the birth process, particularly during breech delivery. The roentgen changes in newborn infants have been described by Snedecor and associates, and by Snedecor and Wilson.

The most frequent clinical manifestations are pain, irritability, tenderness, and restricted motion. These signs are generally mild and easily overlooked. Skin bruises are occasionally seen, but the large skin ecchymoses seen at a later age in the region of fractures are not ordinarily found except when gross breaks occur. Some children have no symptoms and the bone changes are found accidentally when roentgenograms are taken for other reasons. The serum calcium and phosphorus are normal.

Now that rickets and bone syphilis have become rare diseases, trauma is probably the most common cause of skeletal changes in infants and young children. Most of the cases, because of the mildness of the symptoms, are probably unrecognized. Generally, no treatment is necessary and healing is complete without ill effect, but occasionally the growing cartilage is injured and permanent deformity results.

The history is often unsatisfactory either because the parents intentionally suppress details of the traumatic episode or because they are unaware of it. Silverman, in his excellent presentation of this subject, cautions against overwhelming those responsible for the care of the infant with feelings of guilt. A careful explanation may be necessary, emphasizing the need, sometimes, of inflicting a minor injury to protect the child from a major accident, as in the case when a child is seized by the arm to prevent a serious fall. The ease and frequency with which skeletal injury occurs in young children and its benign course may help to allay guilt reactions. In some instances, it may be wise to omit explanations of the cause of the bone lesions to the parents in order to avoid precipitating a family crisis.

The occurrence of multiple bone lesions, often without a history of previous trauma, has led Astley to postulate the presence of an underlying bony defect. Such a possibility cannot be ruled out until bone biopsies have been studied, but it seems unlikely in view of the normal appearance of the unaffected bone, the smooth healing process, and the normal subsequent development of these children.

The radiographic bone lesions are subperiosteal ossification, metaphyseal fractures, avulsions, gross fractures, impacted fractures, and epiphyseal displacements.

The outcome is good unless the growing cartilage has been injured. (Bakwin, H., Multiple Skeletal Lesions in Young Children Due to Trauma: J. Pediat., 49: 7-15, July 1956)

Ureteroileostomy

Permanent diversion of the urinary stream is essential in the definitive treatment of many afflictions. These include diseases requiring total cystectomy, lesions causing urinary incontinence which cannot be treated by attacking the affected organ (e. g., myelomeningocele), and diseases in which the bladder has become so altered that it cannot function in a manner that allows comfort for the patient (e. g., postradiation cystitis, severely contracted bladder).

The methods of urinary diversion commonly used have left much to be desired. Ureterocutaneous anastomoses usually require indwelling catheters for optimum drainage of the renal pelves. Infection of the kidneys is, therefore, frequent, and the organism is usually a urea-splitter which causes the urine to become strongly alkaline. Because the solubility of calcium is thus decreased, calcific concretions form upon the catheters and renal stones are, therefore, common. If catheters are not employed, the ureterocutaneous stomas may become stenosed.

Nephrostomy affords more efficient drainage of the renal pelves, because tubes of large caliber can be introduced. Satisfactory function is impaired, however, if the renal pelves are so small that proper placement of the tip of the tube is difficult. Pyelonephritis almost always develops.

Ureterosigmoidostomy has been widely employed, for it produces urinary continence. It does so, however, at great cost to the patient. Reflux of fecal material up the ureters is to be expected because the pressure at the time of defecation may exceed 200 cm. of water. To circumvent this, some type of obstructed anastomosis seems essential. However, such a procedure must cause urinary obstruction which may result in hydronephrosis and pyelonephritis.

More recently, the employment of excluded bowel as a reservoir or conduit for urine has become popular. Kinman and co-workers, Melick and Naryka, Paull and Hodges, and G.I. Smith and Hinman Jr., have reported on the usefulness of this technique. Intrarectal pressure is low, and the rectal bladder remains relatively sterile. These factors protect the kidneys from hydronephrosis and infection. Hyperchloremic acidosis has not been a problem.

Treatment was based on an operative procedure that would completely divert the urine from the fecal stream and fulfill the principles of a "free-flow" system. It was determined that this could best be achieved with a uretero-ileostomy in which the ileal segment was isoperistaltic and as short and direct as possible and by using Nesbit's elliptical mucosa-to-mucosa technique. The ileostomy was designed to prevent subsequent stenosis of the stoma and to allow immediate application of a plastic bag to the skin.

Seven patients were subjected to this procedure. Four had advanced cancer of the bladder, and one suffered from a vesicovaginal fistula caused

by cancer of the cervix. One girl of 6 years and a boy of 3 years had rectal and urinary incontinence secondary to myelomeningocele.

The present experimental and clinical study suggests that the free-flow principle is superior to that of ureterosigmoidostomy.

Intravenous pyelograms taken 2 or 3 months after operation in the human subjects have demonstrated normal kidneys and ureters. Symptoms of pyelonephritis have not occurred except in the patient who developed herniation and strangulation of the ileal stoma. This obstruction lesion caused renal back-pressure through the patent ileal stomas resulting in temporary hydronephrosis and renal infection. These changes resolved after resection of the distal end of the ileal loop.

The shortest possible ileal segment should be utilized. Redundancy may lead to kinking of the bowel with partial obstruction, stagnation of urine in its proximal portion, and ulceration of the mucosa. The shorter the loop, the less surface is presented for absorption of electrolytes.

The ileal segment is not merely a passive conduit. It undergoes normal peristalsis which contributes to prompt emptying. This has been demonstrated by cineradiography by Miller and Hinman, Jr. Catheterization of the ileum reveals no residual urine. Thus, not only is the common cause for infection absent, but the urine does not remain in contact with the bowel. Absorption of electrolytes has not, therefore, presented a problem in the human subject, though it did in the experimental animal.

The patients, fortunately, have accepted the "wet" ileostomy without complaint. The collecting apparatus remains watertight from 3 to 7 days, and no odor is evident. (Smith, D. R., et al., Ureteroileostomy: Arch. Surg., 72: 915-922, June 1956)

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Eye Infections Following Cataract Extraction

In a previous study on the incidence of postoperative infection, 11 cases of endophthalmitis in 2508 operations for removal of cataract were recorded. In all of the infections, the offending organism, *Staphylococcus aureus*, was present in the preoperative cultures. Furthermore, *Staphylococcus aureus* was found in 529 of the 2508 eyes on which preoperative cultures were done. These observations led to the routine preoperative use of antibiotics in all cataract extractions.

A total of 7662 cataract extractions were performed from 1945 to 1955. The operations included intracapsular, extracapsular, loop, and linear extractions. All of these patients received preoperative antibiotic treatment. No preoperative cultures were obtained on 3854, but in the remaining 3808 where the bacterial flora was known before operation, *Staphylococcus aureus* was found in 1545. The 7662 cases were divided into four groups.

In Group 1 were 3854 operations with no preliminary preoperative cultures. There were five cases of endophthalmitis, four of which were caused by *Staphylococcus aureus* and one by *Escherichia coli*. In two of the five infections, the extractions were done intracapsularly and in three, the extracapsular technique was used.

Group 2 comprised 2263 operations in which *Staphylococcus aureus* was absent from the preoperative eye. No postoperative endophthalmitis occurred.

Group 3 consisted of 978 cases in which the preoperative culture revealed the presence of *Staphylococcus aureus*. In this series, there was one case of endophthalmitis. *Staphylococcus aureus* and *Pseudomonas aeruginosa* were both isolated postoperatively, but *Pseudomonas aeruginosa* had not been found preoperatively.

Group 4 included 567 cases in which *Staphylococcus aureus* was present preoperatively and, in 60, *Escherichia coli* or *Proteus vulgaris* was also found. This group differs from Group 3 in that the operations were deferred and supplementary local treatments with antibiotics were given until bacteria were no longer recovered from the cultures. No postoperative infections occurred in this series.

A number of investigators have reported postoperative infections following cataract extractions. In recent years, Hughes and Owens stated that in a series of 2086 operations performed without prophylactic antibiotic treatment purulent endophthalmitis occurred in 21 cases. After employing prophylactic measures with prolonged treatment, only two cases of postoperative endophthalmitis resulted in 1200 extractions.

In 1953, Callahan lost five eyes in a series of 1653 cataract extractions from endophthalmitis. He believes that delaying the operation for adequate antibiotic treatment has reduced the number of infections in his series and may prevent future cases of endophthalmitis as more specific antibiotics are developed.

Maumenee and Michler have emphasized the possible role of microorganisms carried on the skin as a source of postoperative eye infection. They recommend the topical application of antibiotics one week before operation and the systemic administration of antibiotics a day prior to operation and several days thereafter.

From the data presented previously, it appeared that if *Staphylococcus aureus* was present preoperatively, postoperative infections may occur, but when absent in the preoperative cultures, post operative infections did not occur. The data submitted have shown that the number of postoperative infections in patients known to carry *Staphylococcus aureus* appears to have diminished following routine administration of five local applications of antibiotics. In a limited group of 567 cases with *Staphylococcus aureus* and gram-negative organisms present preoperatively in which the operation was delayed for supplementary local treatments with antibiotics, no postoperative infections

occurred. It would appear that continued applications of antibiotics until no potential pathogens remain might prevent postoperative infections, but a larger series of patients is needed to establish this fact.

Eradication of *Staphylococcus aureus* from the eye requires constant alertness. The organism rapidly acquires resistance to new antibiotics. This finding is in accord with reports from numerous investigators. McNeil found that 48% of staphylococci isolated from a series of 175 patients with chronic external ocular infections were resistant to penicillin. Instances of resistance to aureomycin, terramycin, bacitracin, chloramphenicol, and streptomycin were numerous. The subject has been reviewed by Knight and Collins. (Locatcher-Khorazo, D., M.D., Gutierrez, E., B.A., Eye Infections Following Cataract Extraction - with Special Reference to the Role of *Staphylococcus Aureus*: Am. J. Ophth., 41: 981-986, June 1956)

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Roentgen Manifestations of Caisson Disease

Primarily, this article emphasizes those roentgen manifestations which may be found in some caisson workers.

Not unmindful that a single (or multiple) calcified and/or ossified or rarefied bone infarct may result from a variety of causes, and that many caisson workers with clinical disease never develop skeletal lesions while others with no symptoms develop skeletal lesions, it is, nevertheless, a secondary purpose of the authors to develop the thesis that a diagnosis is possible in the proper patient at the proper time and in the presence of certain roentgen manifestations.

This statement is predicated on an analysis of over 190 positive cases, many with multiple examinations during the past 20 years. It is based on the multiplicity and sites of predilection in certain bones and joints appearing in a certain order and frequency; on the extensiveness of the lesions; on the similar maplike appearance of the lesions which are almost identical and duplicatable; on the subchondral "snowcap;" on the usual symmetrical bilaterality; and on the progress of the lesions with time.

The roentgen manifestations of caisson disease in a fullblown case are almost pathognomonic due to their sites of predilection and sequence of occurrence in the lower femoral diaphysis, the upper tibial diaphysis, the humeral head and neck and the femoral head and neck; on the multiplicity of the lesions tending strongly to symmetrical bilaterality; and on the characteristic geographic maplike appearance of the diaphyseal lesions, so that one case is almost identical with and a duplicate of the others. It may be said that the diagnosis is predicated mainly on the roentgen appearance of the diaphyseal lesions and, to a lesser extent, on the roentgen appearance of the articular ends, unless there is present a "snowcap" on the upper

articular end of the humerus or femur or both. These are fairly characteristic. When the "snowcap" and the diaphyseal lesions are present together the diagnosis is clearly strengthened.

The relative high incidence of certain specific bone and joint lesions in caisson workers leaves little doubt that they are the direct result of that occupation. A history of exposure is, however, very important in appraising a single early lesion, especially if it is in the stage of bone rarefaction. The progressive development of bone infarct in the diaphyses or articular portions (or both) in certain locations while under continued employment, in the absence of other known causes of infarction, is presumptive evidence of causal relationship. It has been very difficult to exactly correlate time of employment with roentgen appearance of lesions. This is due to many variable factors such as irregularity of employment, faithfulness to decompression, alcohol, et cetera. In general, the impression of the authors is that the roentgen manifestations are not seen until a lapse of several years which, for this series, is in the range of at least 3 to 5 years.

Alcohol is a very important component because its effects on adipose tissue somewhat parallel caisson disease so that their coexistence tends to accentuate certain features. (Poppel, M. H., Robinson, W. T., The Roentgen Manifestations of Caisson Disease: Am. J. Roentgenol., 76: 74-80, July 1956)

* * * * *

Treatment of Acute Nephritis

Acute nephritis, sometimes described as acute glomerulonephritis, continues to be a common therapeutic problem, particularly in childhood. Hypertension is a frequent complication of the acute phase and may be associated with cardiac failure, cerebral edema, and convulsions. Cardiac failure continues to be the leading cause of death. This complication results from a primary involvement of the myocardium, coupled with generalized vascular spasm and accompanying increase in blood pressure. Bed rest and sedation are usually ineffective for reduction of the blood pressure and, although still widely used, the hypotensive action of magnesium sulfate leaves much to be desired.

A less common, but highly significant, complication of acute nephritis is the appearance of oliguria or anuria. Skillful symptomatic management during this phase of virtual absence of renal function demands meticulous attention to detail as well as a clear understanding of the physiologic principles involved. The successful and conservative management of anuria must serve a double purpose: (1) limitation of fluid intake to losses from skin and lungs; and (2) by means of glucose administration, reduction of the rate of accumulation of toxic products of metabolism which under circumstances of normal renal function, would be excreted through the kidney.

This report describes the principles underlying the understanding and rational symptomatic management of acute nephritis with minor emphasis placed on the more theoretical problems of etiology and pathogenesis of the fundamental disease process. A brief description of the clinical features of acute nephritis aids in an understanding of the problems discussed.

While the cause of acute nephritis remains obscure, good evidence indicates the etiologic role of infections with a group-A beta-hemolytic streptococcus. These occur usually in the form of an upper respiratory disease (tonsillitis, bronchitis, et cetera) or, in warmer climates, to pyoderma (impetigo) especially in children.

The pathologic picture of acute nephritis is one of generalized inflammatory disease of collagenous tissues with particular involvement of the heart, kidneys, and small blood vessels.

In children, dyspnea, pulmonary edema, abdominal fluid, and enlargement of the liver suggestive of cardiac failure are common. Because both pulmonary edema and ascites may be on the basis of either acute nephritis or cardiac failure, the changing size of the liver often offers the most critical guide to incipient myocardial insufficiency. Progressive liver enlargement is strongly suggestive of cardiac failure. Pulmonary edema is observed more frequently in adults than in children.

Edema is common in both children and adults. This is occasionally limited to the eyelids, more often involving the face and lower extremities, and occasionally advancing to extreme anasarca. Convulsions are, fortunately, uncommon and are probably the result of cerebral edema and ischemia, and reflect again the generalized character of the vascular disease.

The patient's urine contains large amounts of albumin and, usually, many red blood cells and casts. An increase in the number of white blood cells and renal epithelial cells is also seen frequently.

The peripheral blood count may reveal a moderate anemia with the sedimentation rate being invariably fast. Blood urea nitrogen values vary from normal in mild cases to marked elevation in patients with oliguria or anuria.

At present, there is no therapy available directed specifically to the etiology of acute nephritis, but much knowledge and experience has accumulated in the areas of symptomatic treatment. Such an approach does not imply that good treatment is either routine or empiric, but rather, that the physician must individualize his evaluation and planning for each patient if the best prognosis is to be realized.

While experience has shown that disease of the kidney is the obvious finding, the fact remains that death in acute nephritis is due most frequently to myocardial failure. The clinical picture is that of a generalized vascular disease in which the heart, kidneys, and small vessels manifest the most serious involvement. It is logical, therefore, that treatment be directed to these three areas.

Bed rest is a vital part of therapy. Treatment of the patient with anti-streptococcal antibiotics, such as penicillin or tetracycline, is highly desirable, but it is unlikely that this will change the course of the patient's acute renal disease. The role of antibiotics in therapy is more significant in patients with chronic nephritis as a prophylactic measure for prevention of recurrent streptococcal infections with subsequent exacerbation of the nephritic process.

A careful record of the patient's intake and output is an essential part of good care, particularly in patients with reduced urine volume or hypertension. For this reason, it is usually desirable to hospitalize the patient with acute nephritis when any signs of impending complications appear, notably lethargy, vomiting, reduced urine volume, or hypertension. Frank oliguria, convulsions and severe hypertension make hospitalization urgent.

Arterial blood pressures greater than 140/90 are present in the majority of children and most adults with acute nephritis and probably contribute materially to cardiac strain. Elevation of arterial blood pressure may be present initially or may not appear until the third or fourth day of the disease.

The initial period of bed rest usually gives the physician time to assay the stability of the patient's blood pressure as well as to observe his urine volume. Necessary laboratory procedures such as blood counts, urine examinations, and blood urea nitrogen determinations, may also be completed during this period. Minimal degrees of hypertension are often relieved by bed rest alone. However, in the majority of patients, the elevation of blood pressure is of such severity that antihypertensive drug therapy will be necessary.

In the authors' experience, the ideal drug for reducing the blood pressure in patients with acute nephritis is parenteral reserpine (Serpiloid, Serpasil), used alone or in combination with hydralazine (Apresoline). Oral reserpine requires 7 to 21 days for maximum hypotensive effect and is, therefore, of no value in the management of acute hypertensive emergencies.

Every patient with acute nephritis is a potential candidate for anuria. Edema and vasculitis of the kidney greatly impair blood flow and function of the nephron. It is, therefore, necessary to observe closely the daily urine volume. In children, volumes below 10 cc./kg/day can reasonably be classified as oliguria, whereas volumes below 5 cc./kg/day constitute virtual anuria. According to the authors' policy, all patients were limited to 10% glucose in distilled water for the first 24 to 48 hours. The quantity of this solution allowed is based upon the estimated insensible water loss from skin and lungs, plus the observed urine volume. In either anuric or oliguric patients this usually amounts to 30 to 40 cc./kg/day in older children, and 40 to 60 cc./kg/day in infants. Because these patients are existing without benefit of kidney regulation of body fluids, such a regimen accomplishes two desirable purposes: First, it provides a maximum protein-sparing dose of glucose. By decreasing catabolism of body protein in this manner, the rate of

accumulation of the products of cell destruction (urea-potassium, phosphates) is reduced, and development of toxic levels of such metabolites is delayed. The second purpose of this rather austere regimen is to prevent intake of any protein or of salts in excess of body needs because renal excretion of excesses is not possible. Salt should be given only in accordance with severe lowering of the blood chemical value for sodium. The oliguric or anuric patient should not be given potassium salts.

The prevention of excess hydration is assured if the patient is carefully weighed each day. The estimated total fluid intake for that day is then modified on the basis of the previous day's known intake in order to prevent any increase in body weight. Because some catabolism of body tissue invariably takes place, a modest weight loss of a few ounces a day is probably desirable. Attempts should not be made to induce diuresis by the intravenous injection of hypertonic glucose because this procedure tends only to hydrate the patient and will not improve renal function. Laxatives, hot compresses, and enemas are definitely contraindicated. Carbonic anhydrase inhibitors and mercurial diuretics have no place in the management of patients with acute nephritis.

Conservative management may prolong life for a significant time, particularly in oliguric patients. However, in certain instances, the degree of anuria may serve to defeat one's best efforts and the blood potassium rises inexorably to dangerous levels. In such patients, the use of intermittent peritoneal lavage is both simple and effective.

Enlargement of the heart, poor heart tones, and electrographic evidence of myocardial disease are common in acute nephritis.

The control of hypertension through relief of peripheral vascular spasm decreases the strain on the heart and, thus, decreases the tendency to failure. Restriction of fluids minimizes the possibility of hyperhydration, and consequent circulatory overloading. Bed rest, and the soporific effect of reserpine probably contribute materially to the maintenance of cardiac compensation.

Digitalis preparations may be necessary in some patients with progressive enlargement of the liver and increasing dyspnea. (Daeschner, C. W. Jr., Moyer, J. H., Treatment of Acute Nephritis: GP, XIV: 91-105, July 1956)

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

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From the Note Book

1. Dr. Howard T. Karsner, Medical Research Advisor to the Navy's Surgeon General, will be the first lecturer in a series to be given in honor of famous pathologist, Dr. Carl V. Weller. The Michigan Pathological Society has announced the establishment of the Carl V. Weller Lectureship in recognition of his many contributions to medical science in the fields of pathology and clinical pathology. (TIO, BuMed)
2. Captain C. F. Gell, MC USN, received the degree of Doctor of Science (Med.) for Graduate Work in Physiology from the Graduate School of Medicine, University of Pennsylvania, at the 200th commencement on June 13, 1956. Captain Gell earned the degree in an outservice course capacity over the past six years. His dissertation was based on several pieces of original research involving the biological changes in mammals resulting from the various environmental stressors in flight. (N. A. M. C., Philadelphia, Pa.)
3. An article, "On Death by Drowning," by Captain C. C. Shaw, MC USN, Philadelphia Naval Shipyard, was selected for a tape-recorded review in the 13 July 1956 issue of Audio Digest. The original article appeared in American Practitioner and Digest of Treatment, May 1956, Vol. 7, No. 5. (Editor)
4. At the seventh annual reunion of the Fifth Marine Division Association held at Miami Beach, 6 - 8 July, two former members of the Fifth Medical Battalion were honored. Dr. Bernard Botsch, who was regimental surgeon for the 27th Marines, was elected President, and CDR Leon P. Eisman, MSC USN, was elected Vice President. Dr. Botsch is now in private practice in Toledo, Ohio and CDR Eisman is on duty with CNO in Washington. It is believed that this is the first time in the history of the various Marine Division Associations that members of the Medical Department have been elected to such high office.
5. Navy Nurses, if they are qualified dieticians, occupational therapists, or physiotherapists, may now transfer to the Medical Service Corps of the Navy if they fall within the prescribed rank and age limits under present law. This became effective with President Eisenhower signing H. R. 9838, Public Law 606 on June 21, 1956. (TIO, BuMed)
6. The next 12 months will see 44,264 supply items costing about \$2.6 billion annually brought under the Defense Department's newly adopted Single Manager Supply System. These items fall into four classifications set up for common-use materials and common services. Of the total number, 34,295 items are in the clothing and textile category, 7062 in the medical-dental field, 1861 in the subsistence area, and 1046 in the petroleum products classification. (TIO, BuMed)

7. Two thousand and sixty-four revised copies of the Basic Indoctrination Course for Dental Officers (Instructors and Students) and 4085 copies of the Manual in Personnel Damage Control (Instructors and Students) have recently been distributed to dental training activities by the Dental Division, Bureau of Medicine and Surgery. (TIO, BuMed)
8. In an attempt to define limitations of treatment, data are presented for all the patients who had malignant stages of hypertension that had progressed to the point of nitrogen retention before the inception of drug therapy. The initial severity of the disease, the antihypertensive regimen, the changes following therapy, the period of survival and the cause of death are tabulated. (Circulation, July 1956; H.M. Perry, Jr., M.D., H.A. Schroeder, M.D.)
9. From January 1931 to January 1955, 462 children were admitted to Baltimore hospitals with lead encephalopathy or other manifestations of lead intoxication. The majority of these children lived in the congested, low-income areas of Baltimore. Lead paint had been used to paint the interior of the houses for many years and, in many cases, the paint was flaking and scaling so the children had opportunity to eat the flakes of paint or chew on the painted surfaces. (J. Pediat., July 1956; J.E. Bradley, M.D., et al.)
- 10 The authors' experience indicates that moderate to severe funnel chest, although compatible with normal activity and longevity, cannot be considered a benign musculoskeletal deformity. This is a condition where marked alterations of the thorax and, secondarily, its viscera may result in profound disturbances of cardiorespiratory physiology. (Am. Heart J., July 1956; F.W. Wachtel, M.D., M.M. Ravitch, M.D., A. Grishman, M.D.)
11. A community prepayment program to provide dental health care for children seems to offer attractive possibilities for improving oral health conditions and contributing to the satisfactions of dental practice. (J.A.D.A., July 1956; W.O. Young, D.M.D., W.J. Pelton, D.D.S.)
12. The late stages of secretory disease, plasma-cell mastitis, and fat necrosis may be associated with roentgen patterns of calcareous deposits. These may simulate, but can be differentiated from, calcification associated with arteriosclerosis, fibroadenoma, cysts, and malignancy. (Am. J. Roentgenol., July 1956; J. Gershon-Cohen, M.D., M.B. Hermel, M.D.)
13. The use of freeze-dried homogenous bone grafts in the surgical treatment of extravasation or traumatic bone cysts of the mandible appears to effect rapid and uneventful clinical healing of the operative site. (J. Oral Surg., July 1956; LCDR P.J. Boyne, DC USN)

BUMED INSTRUCTION 6010.2B

13 June 1956

From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals and National Naval Medical Center

Subj: Accounting Procedures for Collection Agents

Encl: (1) Accounting Procedures for Collection Agents at U.S. Naval Hospitals
(2) (SC) Forms NavMed 1364, Cash-Service Journal
(3) (SC) Forms NavMed 1365, Collection Agent Ledger
(4) (SC) Forms NavMed 1366, Collection Agent Receipt
(5) (SC) Forms NavMed 1368, Collection Agent Accountability
(6) (SC) Forms NavMed 1369, General Journal
(7) (SC) Ledger Poster (Notal)

This instruction establishes a uniform system which has been approved by the Comptroller of the Navy for the accounting of monies collected from the sale of materials and services at U.S. Naval Hospitals. BuMed Instruction 6010.2A is canceled.

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BUMED NOTICE 6230

29 June 1956

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Department Personnel Regularly Assigned

Subj: Influenza vaccine; use of

This notice provides information concerning utilization of influenza vaccine by military activities during the winter of 1956-57.

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BUMED INSTRUCTION 6150.18

5 July 1956

From: Chief, Bureau of Medicine and Surgery
To: All Stations Having Medical Personnel Regularly Assigned

Subj: Civil service employees' medical record jacket; standardization of in the Naval Establishment

This instruction establishes a standard medical record jacket and a uniform system for maintaining medical records of civil service employees in the Naval Establishment.

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BUMED INSTRUCTION 6250. 5

11 July 1956

From: Chief, Bureau of Medicine and Surgery
To: All Activities Under the Management Control of BuMed
Subj: Insect and rodent control

Ref: (a) BuDocksInst 6250. 3 of 31 Oct 1955; Subj: Insect and rodent control
(b) BuSandA Manual, Vol. 3 (CH-95 of 7 May 1956)
(c) BuDocksInst 6250. 5 of 24 May 1956, Subj: Pest control personnel; certification of
(d) BuMedInst 6250. 4 of 22 Dec 1954, Subj: Pest control; vector (health) and economic

This instruction provides for the effective control of insects, rodents, and other pests at BuMed management activities.

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BUMED INSTRUCTION 1510. 7

13 July 1956

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical/Dental Personnel Regularly Assigned
Subj: Outservice training available to enlisted members of the Hospital Corps

This instruction provides information regarding outservice training available to enlisted members of the Hospital Corps.

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BUMED INSTRUCTION 1510. 4A

13 July 1956

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical Personnel Regularly Assigned

Subj: Training available to enlisted members of the Hospital Corps, Group X

Ref: (a) Catalog of Hospital Corps Schools and Courses (NavMed P-367)
(b) Article 23-144 MMD

Encl: (1) List of courses, prerequisites and convening dates
(2) Sample application for Medical Technical Training Schools and Courses (Class C)

This instruction promulgates information on training available to Hospital Corps personnel and supplements and modifies reference (a). BuMed Instruction 1510.4 is canceled.

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BUMED INSTRUCTION 6700.17

16 July 1956

From: Chief, Bureau of Medicine and Surgery
To: Distribution List

Subj: Respirators; distribution and reporting of

Ref: (a) Art 23-2 ManMed

This instruction reissues instructions concerning the responsibility of District Commandants and River Commands over the location and reporting of respirators within their district to the Bureau. BuMed ltr BuMed -422-LKT ser 54247 of 6 Aug 1948 and BuMed ltr BuMed-42 ser 87400 of 10 Mar 1952 are canceled.

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BUMED INSTRUCTION 7301.3B

18 July 1956

From: Chief, Bureau of Medicine and Surgery
To: All Stations

Subj: Temporary duty travel costs of Army and Air Force military patients in naval facilities

This instruction provides accounting classification data to be cited when transferring Army and Air Force military patients during fiscal year 1957. BuMed Instruction 7301.3A is canceled.

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DENTAL**SECTION**

MEMORANDUM for - All Dental Personnel of the Naval Dental Service
of the United States Navy

Subject: Forty-Fourth Anniversary of the Founding of the U.S. Naval Dental Corps

1. On 22 August 1956, the United States Naval Dental Corps commemorates its forty-fourth anniversary.
2. The Naval Dental Corps was authorized by the Naval Appropriations Act of 1912, which provided for the appointment of not more than thirty acting assistant dental surgeons to serve professionally the personnel of the Naval Service. As a result of the Dental Corps provision in the Appropriations Act, President Taft appointed two prominent civilian dentists, Doctors Emory A. Bryant and William N. Cogan, to examine candidates and establish the new Corps.
3. From the very beginning in 1912, many dedicated and competent career dental officers have worked to give the Navy the best possible dental support. At the present time, dental care is provided in more than 450 dental facilities in ships and stations scattered throughout the world. These facilities are manned by approximately 1800 Dental Officers, 30 Medical Service Corps Officers, 38 Dental Service Warrant Officers, and 3040 Dental Technicians.
4. It is recognized that the excellent dental care provided to the personnel of the Navy and Marine corps during the past year contributed to their military readiness. The Dental Division appreciates the important part played by each individual on the Navy dental team in accomplishing this mission of preventing and remedying those dental diseases which interfere with a serviceman's effectiveness.
5. It is appropriate that all dental officers should in some way recognize this forty-fourth anniversary of the founding of the Naval Dental Corps as

a day of reflection on the significant accomplishments of the past, a consideration of the problems of the present, and to plan for the bright prospects of the future in the light of recently enacted incentive measures and the application of newly developed scientific techniques to the practice of naval dentistry.

R. W. Malone

R. W. Malone
Rear Admiral (DC) USN
Assistant Chief for Dentistry
and Chief, Dental Division

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Increased Participation in Non-Pay Dental Companies

A considerable portion of the training of Reserve Dental Officers in the Ready Reserve is provided by non-pay Dental Companies. These companies are established in the various districts where sufficient concentration of Reserve Dental Officers makes this plan feasible.

These companies schedule a minimum of 24 drills per year, with training supervised at the district level and under the cognizance of the District Dental Officer. Drills are conducted for two hours on subjects of a professional or military nature. Opportunity is thus provided for members to earn both retirement and promotion points.

The number of dental officers participating shows a healthy increase of about 40% in the past two years—an increase attributed largely to the younger men joining the companies. About 30% of all Reservists, both active and inactive, are members of these dental companies.

The popularity of these companies for Reserve training is evidenced by the figures below:

<u>Naval District</u>	<u>Companies - 1954</u>		<u>Companies - 1955</u>		<u>Companies - 1956</u>	
	<u>No. of</u>	<u>Members</u>	<u>No. of</u>	<u>Members</u>	<u>No. of</u>	<u>Members</u>
1	3	57	3	57	3	52
3	6	88	6	88	7	112
4	9	158	10	251	11	340
5	2	23	2	24	2	35
6	7	58	8	74	10	139
8	5	63	4	66	4	66

(continued)

<u>Naval District</u>	<u>Companies - 1954</u>		<u>Companies - 1955</u>		<u>Companies - 1956</u>	
	<u>No. of</u>	<u>Members</u>	<u>No. of</u>	<u>Members</u>	<u>No. of</u>	<u>Members</u>
9	23	283	23	300	23	300
11	6	78	6	104	6	116
12	8	106	7	107	7	105
13	1	11	2	22	2	30
PRNC	2	58	2	56	2	70
	<u>72</u>	<u>984</u>	<u>73</u>	<u>1149</u>	<u>77</u>	<u>1365</u>

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Appointments in the Regular Navy

The Chief of Naval Personnel has recently notified four civilian dentists and one Reserve Dental officer, presently on active duty, of their selection for appointment in the Dental Corps of the Regular Navy. Those selected are:

Dr. Ethan C. Allen
660 South Jackson Avenue
Barstow, Fla.

LT Harry S. Riley DC USNR
U.S. Naval Dental Clinic
Naval Base, Brooklyn, N. Y.

Dr. Lloyd B. Chaisson
Post Office Box #525
South Duxbury, Mass.

Dr. Lee P. Sharp
226 South 6th Street
Monmouth, Ill.

Dr. Joseph F. Taggard
780 Bronx River Road
Bronxville, N. Y.

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Naval Dental Reserve Seminar Planned for Atlantic City

Plans are being made to hold a 3-day Dental Military Seminar in Atlantic City, 1, 2, and 3 October 1956, in conjunction with the 97th Annual Meeting of the American Dental Association. The Seminar will consist of three evening meetings or drill periods. Naval Reserve Dental officers will be credited with one retirement point for each meeting attended under orders from appropriate district commandants. Detailed information will be published as it becomes available.

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New Requirements for Promotion of Inactive Medical Service Corps Officers (Supply and Administration)

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LTJG to LT - Medical Service Corps (Supply and Administration)

Fiscal Year in
Which Selected

1956	Any two subjects in the Executive Area
1957	All subjects in the Executive Area
1958	All subjects in the Executive Area plus any two subjects in the Operations Area
1959	All subjects in the Executive and Operations Areas plus any two subjects in the Technical Area

1960 and

Succeeding Years All subjects in all Areas

Part I - Executive Area

<u>Subject</u>	<u>Correspondence Course</u> <u>Exemptions</u>	<u>School Exemption</u>
1. Administrative Organization and Regulations	Navy Regulations, Nav-Pers 10740-A, and	*Naval School of Hospital Administration NROS 185

In the event the correspondence courses listed in this plan, for any given grade and category, do not provide the officer with an adequate number of promotion points in grade, additional courses may be selected from the approved courses outlined in the current Catalog of Officers Correspondence Courses, NavPers 10800.

<u>Subject</u>	<u>Correspondence Course Exemptions</u>	<u>School Exemptions</u>
1. (continued)	Security of Classified Matter, NavPers 10975-A1	
2. Personnel Administration and Leadership	Leadership, NavPers 10903	* Naval School of Hospital Administration NROS 180
3. Military Justice	*Military Justice in the Navy, NavPers 10993	* U.S. Naval School, Naval Justice * Naval School of Hospital Administration NROS 182

Part II - Operations Area

1. Medical Department of the Navy, Functions and Administration	Manual of the Medical Department, Part I, NavPers 10708	* Naval School of Hospital Administration
2. Medical Department Operations, General	Naval Preventive Medicine NavPers 10703 or Combat and Field Medicine Practice, NavPers 10706	* Medical Field Service School, Camp Lejeune
3. Communications	General Communication, NavPers 10916-A	* Naval School of Hospital Administration

Part III - Technical Area

1. Medical Department Fiscal Operations and Property Accountability, Ashore and Afloat	Appropriation and Cost Accounting, NavPers 10984	* Naval School of Hospital Administration
2. Personnel Management, Military and Civilian	Personnel Administration, NavPers 10968	* Naval School of Hospital Administration

<u>Subject</u>	<u>Correspondence Course Exemptions</u>	<u>School Exemptions</u>
3. Records Management, Military, Civilian and Patient		*Naval School of Hospital Administra- tion
<u>LT to LCDR - Medical Service Corps (Supply and Administration)</u>		

Fiscal Year in
Which Selected

1956..... Any two subjects in the Executive Area
 1957..... All subjects in the Executive Area
 1958..... All subjects in the Executive and Operations Areas
 1959..... All subjects in the Executive and Operations Areas
 plus any two subjects in the Technical Area

1960 and
Succeeding Years . All subjects in all Areas

Part I - Executive Area

1. Administrative Organization and Regulations	Navy Regulations, NavPers 10740-A and Security of Classified Matter, NavPers 10975-A1	* Naval School of Hospital Administra- tion NROS 185
2. Personnel Admin- istration and Leadership	Education and Training, Part I, NavPers 10965-1 and Education and Training, Part II, NavPers 10966	* Naval School of Hospital Administra- tion NROS 183A NROS 183B
3. Military Justice	Military Justice in the Navy, NavPers 10993	*U.S. Naval School, Naval Justice *Naval School of Hospital Administra- tion NROS 182

<u>Subject</u>	<u>Correspondence Course Exemptions</u>	<u>School Exemptions</u>
<u>Part II - Operations Area</u>		
1. Medical Department of the Navy, Functions and Administration	Manual of the Medical Department, Part I, NavPers 10708	*Naval School of Hospital Administration
2. Medical Department Operations, General	Naval Preventive Medicine, NavPers 10703 or Combat and Field Medicine Practice, NavPers 10706	Medical Field Service School, Camp Lejeune

Part III - Technical Area

1. Medical Department Fiscal Operations and Property Accountability, Ashore and Afloat	Appropriations and Cost Accounting, NavPers 10984	*Naval School of Hospital Administration
2. Personnel Management, Military and Civilian	Personnel Administration, NavPers 10968	*Naval School of Hospital Administration
3. Records Management, Military, Civilian, and Patient		*Naval School of Hospital Administration

LCDR to CDR - Medical Service Corps (Supply and Administration)Fiscal Year in Which Selected

1956.....	Any two subjects in the Executive Area
1957.....	All subjects in the Executive Area
1958.....	All subjects in the Executive Area plus one subject in the Operations Area
1959.....	All subjects in the Executive and Operations Areas
1960 and <u>Succeeding Years</u>	All subjects in all Areas

Part I - Executive Area

<u>Subject</u>	<u>Correspondence Course Exemptions</u>	<u>School Exemptions</u>
1. Personnel Administration and Leadership	Personnel Administration, NavPers 10968 and Navy Public Information, NavPers 10720-1	NROS 180
2. Military Justice	* Military Justice in the Navy, NavPers 10993	* U.S. Naval School, Naval Justice * Naval School of Hospital Administration NROS 182

Part II - Operations Area

1. Medical Operations	Tropical Medicine in the Field or Frigid Zone Medical and Dental Practice, NavPers 10997	*Naval War College
2. Logistics	Logistics, NavPers 10902-1 or Logistics (Naval War College)	* Armed Forces Staff College * Industrial College of the Armed Forces

CDR to CAPT - Medical Service Corps (Supply and Administration)Fiscal Year in Which Selected

1956 Any two subjects in the Executive Area
 1957 All subjects in the Executive Area
 1958 All subjects in the Executive and Operations Areas
 1959 All subjects in all Executive and Operations Areas
 1960 and
Succeeding Years . All subjects in all Areas

Part I - Executive Area

<u>Subject</u>	<u>Correspondence Course Exemptions</u>	<u>School Exemptions</u>
1. Military Justice	Military Justice in the Navy, NavPers 10993	* U.S. Naval School, Naval Justice * Naval School of Hospital Administration NROS 182

Part II - Operations Area

1. Medical Operations	Tropical Medicine in the Field or Frigid Zone Medical and Dental Practice, NavPers 10997	* Armed Forces Staff College or * Naval War College
2. Logistics	Logistics, NavPers 10902-1 or Logistics (Naval War College)	* Armed Forces Staff College or * Naval War College

* Exemption for two grades

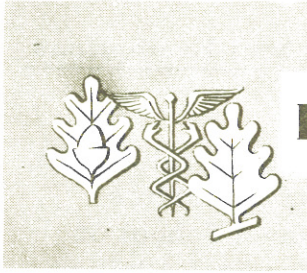
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Physical Examinations at Main Recruiting Stations

Applicants for appointment to a commissioned status in the Reserve Medical Department including Ensign, 1996 (Medical) candidates may now obtain physical examinations at Main Navy Recruiting Stations in addition to Offices of Naval Officer Procurement, so states the Chief of Naval Personnel in a letter to the Chief, Bureau of Medicine and Surgery, dated June 1956. Main Navy Recruiting Stations are located in the following cities:

Ashland, Ky.	Des Moines, Iowa	Louisville, Ky.
Baltimore, Md.	Fargo, N.D.	Oklahoma City, Okla.
Birmingham, Ala.	Indianapolis, Ind.	Portland, Me.
Columbia, S.C.	Jacksonville, Fla.	Portland, Ore.
Columbus, Ohio	Little Rock, Ark.	Richmond, Va.

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PREVENTIVE MEDICINE SECTION

Future of Atomic Energy

The author discusses the use of nuclear energy in diverse industrial fields and in various geographic localities; its present day and probable future economics and the need for special studies of specific phases. The development of nuclear energy involves a twofold responsibility: that it should be fundamentally a safe industry and that it should not create a basic new hazard to the population at large. Probably no other new industry has had the benefit of so much attention from the very start to the question of health protection. A large body of information is already available concerning the immediate effect of radiation on living organisms based on animal experimentation. From the data thus acquired, it has been possible to prepare a list of safe levels of radiation and of the amounts of radioactive materials that can be ingested. There is, furthermore, the much larger problem of the long-term effects of raising the world-wide level of radiation by the dispersal of fission products. Our knowledge of the genetic effects of radiation on the human organism is relatively meager; this field should continue to be the object of intensive research. (Cockcroft, J., *Future of Atomic Energy*: Scient. Month, 82: 136-141, March 1956)

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Additional Food-Service Training Aids

A series of training aids, developed by the U.S. Department of Health, Education, and Welfare, has been procured and distributed to district training aids libraries of the Navy and Marine Corps. These films, films strips, and slides are intended for use in conjunction with NavPers 230074 (Flip Charts for Training Food-Service Personnel) and NavPers 91921A (Instructions in Sanitary Precautions for Food-Service Personnel, revised November 1955). It is believed that the addition of these films to those formerly available forms a well-rounded adjunct to a program that may be readily presented by the instructor. The material contained in these training aids is appropriate for showing to both military and nonmilitary personnel. A brief description follows:

1. M-148f. Serving Food. (Color, 10 minutes, 360 feet, 1954)

This motion picture is designed to portray the hiring of a waitress and to show the fundamentals of orientation and induction given to her by a restaurant hostess. The film stresses: (a) proper storage of cups, dishes, and glasses; (b) cleanliness; (c) correct ways of clearing tables; (d) protecting waitress's health as well as customer health; (e) the importance of a periodic physical examination; (f) safeguarding against disease; and (g) development of satisfactory personal habits by food-service personnel.

2. M-148b. An Outbreak of Staphylococcus Intoxication. (Color, 12 minutes, 441 feet, 1954). This motion picture provides a study case of a typical outbreak of foodborne illness caused by Staphylococcus organisms. It shows: (a) the events occurring during an outbreak of foodborne illness in which 14 persons out of 23 who attended a dinner party became ill subsequently with varying degrees of nausea, vomiting, abdominal cramps, and diarrhea; (b) evidence which pointed to the French pastry as the source of the organisms, laboratory tests revealing Staphylococcus aureus in the pastry filling; and (c) how the organisms reached the pastry filling from a superficial skin infection on a baker's finger and developed in the filling during a 6-hour breakdown of a bakery truck en route to delivery, the organisms growing and producing toxins sufficient to cause the outbreak of Staphylococcus intoxication.

3. M-148d. Food Preparation. (Color, 13 minutes, 460 feet, 1954)

This motion picture is designed to depict the important factors involved in the preparation of food in such a manner as to reduce or eliminate outbreaks of foodborne illness. The picture shows: (a) the concept of "healthy" food as being safe, nutritious, palatable, and attractive; (b) the importance of trained and skilled personnel; and (c) factors in food preparation which reduce the chance of foodborne illness: (1) thorough cooking, (2) correct steam-table operation, (3) use of refrigerator, (4) avoidance of "left-overs," and (5) cleanliness. The film portrays actual cooking operations involved in preparing a typical meal in a medium sized restaurant and emphasizes the important sanitary precautions taken by kitchen personnel.

4. M-148g. Kitchen Habits. (Color, 12 minutes, 425 feet, 1954) This motion picture is designed to depict desirable kitchen habits that allow food to be prepared in such a manner as to reduce or eliminate outbreaks of foodborne illness. It is taken in a kitchen under actual operating conditions and shows the importance of developing good habits related to food sanitation. Small personal things such as scratching the head, rubbing the nose, or smoking a cigarette can cause serious trouble in a food-service establishment. Individual awareness of personal responsibility and effective supervision is the best answer to the problem of developing safe kitchen habits.

5. F-148e. Basic Principles of Kitchen Layout. (Filmstrip, 84 frames, 1953) Designed to aid in teaching the basic principles of layout of kitchen facilities and equipment for eating establishments, this filmstrip, by means of artists' drawings and explanatory narration, develops principles

of efficient kitchen layout as follows: (a) appropriate shapes and sizes for typical kitchens of various eating and drinking establishments; work-flow arrangements related to the job; (c) factors affecting economy and efficiency of equipment and cleanliness; (d) location of storage and other miscellaneous facilities; and (e) relation of proper equipment in the right place to cleanliness.

6. F-10a. High-Temperature Short-Time Pasteurization: Equipment and Controls. (Filmstrip, 12 minutes, 96 frames, 1951) This filmstrip is designed to aid in teaching milk sanitarians and others responsible for milk sanitation programs the functioning and effectiveness of high temperature short-time pasteurization processes. It shows (a) the structure, flow-plan, and operating principles of a typical "high temperature short-time" installation; (b) how all of the equipment and controls work together to insure that every particle of milk is heated to at least 161° F. and is held at that temperature for at least 15 seconds so that all pathogenic bacteria likely to be found in milk will positively be destroyed.

7. F-21a. Basic Principles of Refrigeration. (Filmstrip, 12 minutes, 71 frames, 1951) This filmstrip is designed to portray the importance of refrigeration in preventing foodborne disease outbreaks, the maintenance and proper use of the refrigerator, and the principle of the cooling cycle. It shows (a) motivating introduction stressing the correlation between inadequate refrigeration and outbreaks of food poisoning; (b) the operating principle of the refrigerator; (c) maintenance of the refrigerator; and (d) precautions in the use of refrigerators that will improve their efficiency.

8. F-21b. Refrigerated Food Storage Principles. (Filmstrip, 12 minutes, 62 frames, 1951) This filmstrip is designed to depict the theory and practice of storing foods in refrigerators to prevent food spoilage. It shows: (a) some reasons for food spoilage (haphazard storage methods, long retention of leftovers, and small refrigerator boxes); (b) how foods should be placed in the refrigerator to allow currents of cold air to circulate freely about them; (c) where various kinds of food should be placed and the reasons for specific locations; and (d) the importance of defrosting, cleaning, and disinfecting the refrigerator regularly.

9. S-148k (1). Construction of Building. (Color, 32 2- by 2-inch slides, 1954) This group of slides shows various degrees of acceptability and nonacceptability of restaurant construction.

10. S-148k (2). Utensils and Equipment. (Color, 34 2- by 2-inch slides, 1954) These slides show various degrees of acceptability and non-acceptability of utensils and equipment.

11. F-148k (3) Washing and Storage. (Filmstrip, color, 65 frames, 1954) This filmstrip shows various degrees of acceptability and nonacceptability of washing and storage procedures.

12. S-148k (4) Refrigeration and Foodhandling. (Color, 46 2-by 2-inch slides, 1954) This group of slides shows various degrees of acceptability and nonacceptability of restaurant construction.

Proper Handling of Plastic Resins
and Associated Chemicals

Plastics are being used increasingly by the Navy. Structural items fabricated from glass-reinforced plastic laminates are becoming more and more commonplace, as are such specialty items as emergency pipe-repair kits and plastic fillers for metallic surfaces. Careful attention should be given to proper handling practices and interim health precautions have been developed. The precautions to be taken will depend on the nature of the job underway; the resins, solvents, and catalysts being used; the size of the job; and the existent environmental conditions. Due to these many variable factors, it is strongly recommended that the station's industrial hygienist be called to the job site and his comments sought before any specific job is undertaken.

The chemicals used should be handled with respect, but not with fear. If the following health precautions are followed, the potential health hazard will be greatly minimized:

Avoid contact with skin and eyes. If only very limited exposure is expected, careful handling may be sufficient. Use of protective skin creams may also be indicated. As soon as a job is completed, or immediately after any accidental skin contact, wash all exposed skin thoroughly with soap and water. If clothing becomes contaminated, wash the clothing before wearing it again. Where extensive use is involved, use protective clothing, gloves, and goggles. Wash all protective equipment after each use. Finally, if any individual worker shows a personal sensitivity to the chemicals, he should be referred to the medical department for evaluation.

Do not inhale fumes or dust. If work is not to be done out of doors, positive local exhaust ventilation should be provided to draw fumes away from the worker. Organic vapor respirators, approved by the Bureau of Mines, may be required for protection against gases if such ventilation cannot be provided. Approved dust respirator may be required during the process of grinding off the excess filler.

Good housekeeping is very important. Avoid spilling. Promptly clean up all drippings, waste, and deposits on tools. Discard waste matter in covered waste cans and keep chemical containers clearly labeled.

Do not work near hot surfaces or open flames.

Smoking should not be permitted.

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National Control Centers for Technical Information
on Home Poisoning Hazards

The technological advance of our industry and the common habits of the "do-it-yourself" fans have resulted in the production, sale, and home

possession of a large number of potentially harmful chemicals. Fertilizers, weed-killers, cleaning fluids, floor wax, insecticides, proprietary drugs, home permanents, silver polish, paint and varnish solvents, other solvents, glues, and mastics are only a few of the new materials that have been introduced into the home. Dr. Bernard Connely, Secretary of the Committee on Toxicology of the American Medical Association, has estimated that there are some 250,000 of these trade-named products on sale. Although they are not all dangerous by contact, inhalation, or ingestion, those that are dangerous cannot be identified easily and consistently by memory from brand names. Furthermore, it is difficult for physicians to remain currently informed on choice or specific antidotes for all the materials to which exposure is more likely. In order to assist the physician servicing an emergency call from the householder when something identified only by brand name has been swallowed, poison control centers have been established in 14 cities.

The first center was established in Chicago by Dr. George M. Wheatley, Chairman for the American Academy of Pediatricians' Accident Prevention Committee. A manual, "Accidental Poisoning in Childhood," compiled by the Chairman of the Academy's Poisoning Subcommittee, is available to all hospitals participating in the program. This manual lists the common household materials that might be ingested by children and the subsequent treatment recommended.

The primary function of the centers is to maintain and coordinate information on toxic ingredients of brand name household items, equipment, and antidotes for emergency room treatment, and authoritative reference material. The center also collects formal reports for analysis of home poisoning trends, and of the efficacy of prescribed antidotes.

Information about centers in operation may be obtained from: Dr. Lendon Snedeker, Executive Secretary, Boston Committee for the Control of Accidental Poisoning in Children, 300 Longwood Ave., Boston, Mass.; Dr. Joseph Christian, Chairman, Department of Pediatrics, Stritch School of Medicine, 706 South Wolcott St., Chicago, Ill.; Dr. Kathryn Willis, Chief Resident, Southwestern Medical School, University of Texas, 2211 Oak Lawn Ave., Dallas, Tex.; Dr. Jay Arena, Duke Hospital, Durham, N.C.; Dr. Mark W. Dick, 1508 McKay Tower, Grand Rapids 2, Mich.; Rosemarie J. Tursky, Child Health Committee, Dauphin County Medical Society, 1000 N. 2nd St., Harrisburg, Pa.; Dr. Irving Rosenbaum, 401 E. 34th St., Indianapolis 5, in association with Health & Hospital Corp. of Marion County, 307 City Hall, Indianapolis 4, Ind.; Dr. William Curtis Adams, Assistant Professor of Child Health and Coordinator of Louisville Poisoning Control Program, School of Medicine, University of Louisville, Louisville 2, Ky.; Dr. George W. Starbuck, Chairman, American Academy of Pediatrics, Accident Prevention Committee, 68 Arnold St., New Bedford, Mass.; Dr. Harold Jacobziner, Assistant Commissioner, New York Dept. of Health, 125 Worth St., New York

13, N. Y.; Dr. Paul B. Jarrett, Chairman, Committee on Safety, Maricopa County Medical Society, 2025 N. Central Ave., Phoenix, Ariz.; Dr. J. Keller Mack, St. John's Hospital, Springfield, Ill.; Dr. William H. Fost, Babies Hospital, 15 Roseville Ave., Newark 7, N. J.; and Dr. Allan B. Coleman, 1433 Whittier St., N. W., Washington 12 D. C.

Physicians may also write directly to the Chemical Poisoning Committee of the American Public Health Association, 1790 Broadway, N. Y., or to the Accident Prevention Committee of the American Academy of Pediatrics, 1801 Hinman St., Evanston, Ill. (Home Poisoning Hazards Increase: National Control Centers Listed: Scope Weekly, Upjohn Company Physicians News Service, Inc.: 1:14, 2 January 1956)

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Toxoplasmosis

During the last 10 years, it has been learned that the incidence of human infection by Toxoplasma is very common, although the infection rarely gives rise to clinical disease. By skin test and serologic surveys, the age frequency distribution indicates that the number of infections before age 5 is low, but that an increasing number of persons over this age are infected, and that from 30 to 70% of persons aged 40 to 60 years have been infected, depending on the area surveyed and the test used. Workers at Yale University, supported by an Office of Naval Research contract, have investigated the methods by which this common infection usually reaches man.

The authors present considerable evidence suggesting that one important pathway of human infection parallels that of trichinosis. Toxoplasma-infected rodents are eaten by pigs, and pigs in nature may be Toxoplasma carriers. Toxoplasma in pork survives the normal commercial processing and can be expected to be viable upon arrival in the kitchen. Toxoplasma also survives the gastric digestion process and animals, including primates, can be infected by a single feeding of infected material.

The authors do not suggest that this is the only, or even the most important pathway of human infection. Their evidence does lend further weight to the need for adequate cooking of all pork and pork products, and even suggests that somewhat greater care in handling many pork products would be wise until more is known of the disease. (Weinman, D., Chandler, A. H., M. T., Toxoplasmosis in Man and Swine - An Investigation of the Possible Relationship: J. A. M. A., 161: 229-232, May 19, 1956)

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The printing of this publication has been approved by the Director of the Bureau of the Budget, 16 May 1955.

Importance of a Complete Yearly Chest Survey

Mobile Photofluorographic Unit Number 8, attached to Preventive Medicine Unit Number 2, Norfolk, Va., reported that, following the discovery of one active case of pulmonary tuberculosis on a naval vessel of an allied country, three additional cases were discovered during a routine survey aboard the ship.

The Preventive Medicine Unit also reported that a number of tuberculosis cases have been discovered within the past few months from both ships and shore stations. They pointed out that, although the personnel concerned were present at a ship or station at the time the mobile unit visited it, they were not x-rayed. In some instances the individual's record indicated that a chest x-ray was to be taken at the next duty station having such a facility, yet, when the opportunity was presented, no x-ray was taken. As a result, there was no report of a recent chest x-ray of any of these men and it was not until they presented symptoms that the condition was diagnosed.

This stresses again the all important need for a yearly chest x-ray survey with 100% of military personnel participating, rather than the 90% who now seem to participate. A partial survey is not adequate and weakens the tuberculosis case-finding program.

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Permit No. 1048

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BUREAU OF MEDICINE AND SURGERY

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